



Illinois Department of Transportation

Memorandum

To: DIRECTORS, DEPUTY DIRECTORS, AND BUREAU CHIEFS
From: Scott Doubet
Subject: Technical Vacancy
Date: September 19, 2006

Attached are the Position Summary Sheet and Position Description for the vacant technical position listed below. Please post this vacancy announcement **Wednesday, September 20, 2006**, in the designated areas.

The deadline for applicants to submit their names for consideration is **4:30 p.m.** on **Tuesday, September 26, 2006**. Applicants will not be accepted after that time and date.

NOTE: Applications will be accepted from permanent IDOT employees only within District One.

All applicants will receive a position description for the position they are applying for. If you have any questions, please contact Karon Hamrick or Karla Gathard at 217/782-5594.

CE V

Traffic Signal Engineer
Division of Highways
Region 1/District 1
Schaumburg

Attachments
32182

Resumes **must be received** by the Bureau of Personnel Management, Room 110, 2300 South Dirksen Parkway, Springfield, IL 62764 (Fax# 217/782-0931) by 4:30 p.m. on **Tuesday, September 26, 2006**. Please include address, daytime phone and position for which applying if not already listed on applications or resume. Applicants will be notified in writing to schedule interviews. **NOTE: Applications will be accepted from permanent IDOT employees only within District One. A copy of each applicant's ACTIVE Illinois Professional Engineer License MUST accompany application for this position.**



Illinois Department of Transportation

Position Summary Sheet

An Equal Opportunity Employer

Classification: Civil Engineer V

Position Title: Traffic Signal Engineer

Position Number: PW115-23-51-901-30-01

Salary Range: \$4,785 - \$7,750

IPR#: 32182

Appointee:

Name _____

Salary _____

Effective Date _____

Office Use Only

Office/Central Bureau/District:

Highways/District One/Schaumburg/Bureau of Traffic

Description Of Duties:

This position is accountable for improving the safety and efficiency of the traffic flow on the district's highways by directing all activities relating to the development of traffic signal improvement programs, electrical maintenance contracts, the application of appropriate traffic engineering principles to the design operation and maintenance of traffic signal installations, including coordinated traffic signal systems.

Special Qualifications:

The following criteria is required:

- An Illinois Professional Engineering license
- Current Illinois driver's license

The following criteria is desired:

- Minimum three years managerial experience
- Strong oral and written communication skills

Remarks:

Please limit application and/or resume to two pages.

**ILLINOIS DEPARTMENT OF TRANSPORTATION
POSITION DESCRIPTION**

DATE:	<i>May 15, 2006</i>	POSITION:	<i>Traffic Signal Engineer</i>
APPROVED BY:	<i>Stephen Travia</i>	OFFICE/DIVISION:	<i>Highways/District One/ Schaumburg/Bureau of Traffic</i>
CODE:	<i>PW115-23-51-901-30-01</i>	REPORTS TO:	<i>Traffic Programs Engineer</i>

Position Purpose

This position is accountable for improving the safety and efficiency of the traffic flow on the District's highways by directing all activities relating to the development of traffic signal improvement programs, electrical maintenance contracts, the application of appropriate traffic engineering principles to the design, operation and maintenance of traffic signal installations, including coordinated traffic signal systems.

Dimensions

Subordinate Personnel	Direct 7, Indirect 9
Annual Operating Budget	\$1,000,000
Traffic Signal Installations	State Maintained 2,400 Locally Maintained 1,900
Annual Traffic Signal Improvement Program	\$15,000,000 - \$20,000,000
Annual Signal Maintenance Contract	\$10,000,000 - \$15,000,000
Physical Plant Value of Traffic Signals Maintained	\$300,000,000
Traffic Signal Systems	290
Annual Consultant Contract Supervision	\$1,000,000

Nature and Scope

This position reports to the Traffic Programs Engineer as do the Traffic Design Engineer, the Traffic Studies Engineer and an Office Coordinator. Reporting to this position are the Traffic Signal Program and Agreements Technician, three Area Traffic Signal Operations and Maintenance Engineers, two Senior traffic Signal Systems Engineers and an Office Coordinator.

This position functions in a highly urbanized and otherwise rapidly developing area characterized by high traffic volumes, very close intersection spacing and over 250 abutting independent local governmental units that share responsibility for traffic signal installation and maintenance, but rely on the District's technical knowledge for proper operation of all traffic signals. The many different traffic signal installations require a detailed technical knowledge of the complex operating characteristics of solid state digital, volume density, fully actuated, semi-actuated and fixed time traffic signal controllers and their design features, limitations and capabilities; affect on traffic capacity and safety; and the relationship of adjacent signalized intersections on overall traffic flow. Every vehicle mile of travel in the District is affected by the timing of traffic signals and seconds saved can mean the difference between intersection breakdown, traffic accidents, motorist delay or smooth efficient flow. The high traffic volumes in this area where forty-seven billion vehicle miles are traveled annually pose a continuous threat to traffic interruption. This, plus the declining availability and/or high cost of right-of-way, places unusual importance on the continuously effective operation of traffic signals on the existing highways if the safety and efficiency of the traffic flow is to be maintained.

Typical problems encountered by the incumbent include: optimizing traffic flow through adjustments in signal timing and sequence of operations; ensuring compliance by county, municipal and consulting engineers with State laws, Federal guidelines and Departmental policies in meeting minimum warrants for the installation of traffic signals; providing technical expertise for the systematic field review and the evaluation of all existing traffic signal controller settings; developing a priority program for installing and modernizing traffic signals; coordinating District and local agency signal installations so as to effect standardization in design and economics in construction; investigating, evaluating and determining the applicability of experimental equipment and new techniques of traffic flow improvement; and ensuring the completeness, accuracy, currency and retrievability of files and records covering traffic signal inventories, agreements, plans, equipment, maintenance contract documents and closed loop signal system data bases. The greatest challenge to this position is to provide the application of the appropriate technical principles and skills required to develop complex sequence of operations and improved settings for all types of traffic signal controllers and conditions.

The incumbent must keep pace with the latest developments in volume-density controllers, computer microprocessors, detectors and coordination hardware and software. The incumbent must utilize micro-computer based equipment for the development of traffic signal system optimization programs and traffic signal system monitoring equipment. The incumbent must utilize traffic engineering computer programs for the development of time-space relationships; capacity analysis; signal sequencing; traffic count summaries; data base and spreadsheets. The incumbent must develop control techniques which are unique to the traffic conditions in this area, since there are very few metropolitan areas in the country with comparable traffic volumes. The incumbent is responsible for the development of the SCAT Program (Signal Coordination and Timing). This program utilizes the services of consulting engineer firms to develop and refine timing plans for existing closed loop signal systems. This program ensures the investment made in closed loop systems is optimized for the benefit of the motoring public. The incumbent personally provides direction to the subordinate staff on the statutory, administrative and complex technical aspects pertaining to the installation and constantly changing field operation of traffic signals; implements policies and procedures for the standardization of the design of traffic controls; ensures that the Bureau of Programming is informed of traffic engineering surveys and scope of work on projects for all locations found to warrant traffic signal control; develops the annual signal program and all related agreements pertaining to physical and financial responsibilities for the new signal construction and modification to existing controls; provides direction for supervision of consultant contracts for signal system coordination and timing and develops programs and negotiates agreements for the systematic maintenance of traffic signal installations; supervises the preparation of traffic signal special provisions for permits issued to private developers and ensures that Traffic Signal Master Agreements for maintenance and energy, currently in effect for over 160 municipalities, are updated as required and that provisions of these agreements are properly implemented; supervises the administration of the Traffic Signal portion of the Electrical Maintenance Contract; provides expert testimony on signal installations at legal and administrative hearings; and ensures the acceptability of signal installations on all construction projects.

The incumbent accomplishes these accountabilities through the following staff:

Traffic Signal Program and Agreements Technician - who prepares a program for the installation of all new traffic signals, the modernization of existing installations, prepares joint agreements, modifies master agreements, reviews all agreements prepared by the District bureaus and prepares special provisions for permits issued to private developers.

Senior Traffic Signal Systems Engineers (2) - who, with a staff of six, are responsible for the planning, development, design, implementation, operation and maintenance of all closed loop traffic signal systems and traffic signals interconnected with railroad warning systems on highways under the Department's jurisdiction within the District.

Area Traffic Signal Operations and Maintenance Engineers (3) - who, with a staff of three, are responsible for performing the complete range of signal operations, inspections and maintenance activities in an assigned geographical area.

Office Coordinator - who performs clerical, filing and typing duties.

The incumbent, under the general direction of the Traffic Programs Engineer, accomplishes these assignments in accordance with the established procedures; but sound judgment and independent decisions are exercised in the ever changing "state-of-the-art" of the design and operation of traffic signal installations.

The incumbent must establish and maintain contact with the Bureaus of Programming, Design, Materials, Construction, Electrical Operations and Local Roads concerning the design review and final inspections of traffic signal control installations; also with the traffic engineers for municipalities and counties, consultants, law enforcement officials contractors and manufacturers concerning the need for new traffic signals or changes in the existing sequence of operations, or in the review and implementation of micro-processor based equipment. The incumbent must also establish and maintain contact with Administration regarding personnel matters and invoicing of traffic signal participation.

The effectiveness of this position is measured by the ability of the incumbent to minimize delays for vehicular traffic on State maintained routes through installations and adjusting as necessary.

Principal Accountabilities

1. Supervises the activities of the Traffic Signal Unit and various consulting firms.
2. Ensures the development of the annual District traffic signal improvement program.
3. Systematic evaluation of the timing and phasing of all traffic signal control installations on State routes, and provides for their proper maintenance through the Electrical Maintenance Contract.

4. Ensures the proper approval of the installations of all new traffic control signals and coordinated traffic signal systems within the District.
5. Provides technical advice to communities and consultants concerning traffic signal design and operation.
6. Ensures the systematic operation, evaluation and maintenance of all individual traffic signal installations and coordinated signal systems through a subordinate staff and traffic design consultant.
7. Ensures the accuracy and completeness of complex agreements and permits for the financing, design, construction, operation and maintenance of traffic signals.
8. Ensures the establishment of a complex technical data base and its perpetual maintenance.
9. Ensures inquiries from the public are handled professionally and in a timely manner.
10. Performs duties in compliance with departmental safety rules. Performs all duties in a manner conducive to the fair and equitable treatment of all employees.